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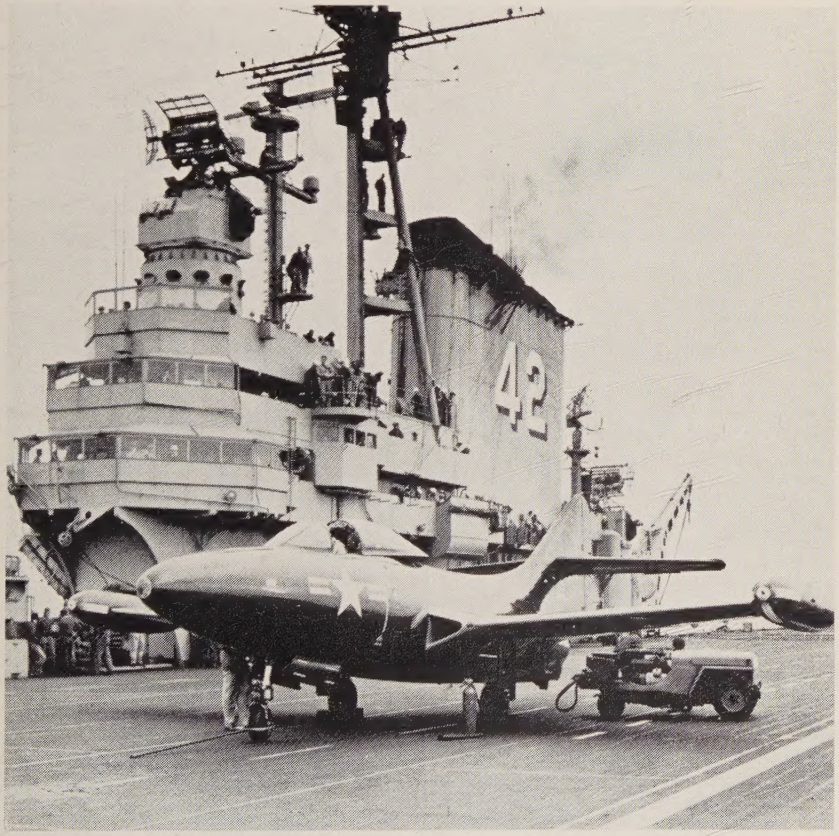

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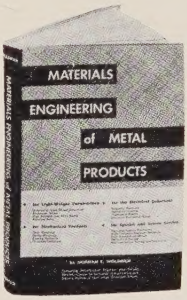

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M. E. McIVER, Editor

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Are Accomplishments Assets?

Your president and your Board of Directors welcomes constructive criticism from the members of A.A.E. After all the membership is the backbone of the Association—the soul—so to speak, and should make its wishes known for proper advancement of the aims and ideals of this Society now in its 36th year.

National Headquarters appreciates the many fine letters that it has received during the past few months. Many members have taken the time to express appreciation, offer suggestions, renew acquaintances via correspondence, and the National Secretary has tried to answer every letter personally.

One of these letters deserves special attention. It is from a Member deeply interested in A.A.E. but perhaps not fully acquainted with the work of the Association over the years.

For example, he tells us that our young members are not interested in the past glories or accomplishments of A.A.E. They are interested only in knowing what we are doing at the present time to help them.

Permit me to answer this letter in a typical Yankee fashion by asking another question.

When you apply for a new job or seek advancement in your present job do you imagine, for one moment, that no attention is paid to your past performance and experience, or will your employer, or prospective employer spend all his time telling you what the new job will do for you?

And, if you were trying to locate with a new employer, how could he tell if you were capable of handling same without a complete analysis of your past experience and known performance?

Similar reasoning would be followed if you were seeking advancement in your present job.

Since "long shots" rarely come home, very few employers can afford to place their money on "long shots" in the Engineering Profession.

We also know it may be tiresome and unpleasant to a few of us to hear about past performances that were highly successful, but they are presented to you and to the newcomer in the field so that he and you may realize just what has been accomplished in the interests of the Engineer and Engineering.

The statements made by A.A.E. *are based upon actual fact* and are not the result of wishful guessing.

Would you pick as your associate, or place in a key job someone whose qualifications were unknown to you? *I know you would not.*

Instead of bemoaning your fate, just what are YOU doing to help A.A.E. and your fellow Engineer, and thereby actually help yourself?

Are you a worker or are you a wishful thinker?

Did you ever have a prize rosebush that bloomed profusely for many years and was admired by many, and, suddenly it barely blossomed?

Did you dig it up and throw it into the rubbish and start experimenting with a newer variety that appeared, for a time, to give satisfactory results?

Suppose you thought enough about your prize plant to find out what was wrong and correct its ills and then the older plant bloomed better than ever before because it had a better and stronger body.

I know that tools may become obsolete and require discarding, but this does not apply to A.A.E.

Stop for a moment and analyze A.A.E. and you will find that each and every one of the newer organizations that have sprung up recently have taken or copied one or more of the basic principles of A.A.E. that are just as true and workable today as they were 35 years ago.

Let me tell you a little story.

Last night I received, by air mail from Honolulu, a letter that started like this:

"Dear Fitz:

"When I attended the A.A.E. Convention in 1926 you graciously loaned me a new book that you felt would help me.

"Little did I think that 24 years would go by before I got around to returning it.

"Along with my apologies, I want to let you know that having that book before me kept you and the fine things done by A.A.E. constantly in my mind, so that I can never forget the great things you have done for the Engineering Profession."

Now, if one little book can weld a man to A.A.E., just think what you can do if you really try.

Stop looking around for some new magic gadget to cure all of your ills and actually make use of the one you have had for 35 years and use a little of that grey matter above the ears that the Good Lord gave you and we will come back stronger than ever.

Sincerely,

Edmund J. Fitzwarren

President

Engineers and the Language Arts

by M. P. McGirr

Formerly research editor, American Association of Engineers. Now teacher of Language Arts, P. K. Yonge School, Pensacola, Florida.

"ENGINEERS are inarticulate," said the first leaders of the movement to "improve the social and economic status of the Engineer." Executives of great corporations, when queried as to the reason that engineering compensation is law and that members of the profession are not accorded recognition in executive rank, registered the same complaint. Officers of civic organizations in every part of the United States to whom a questionnaire was sent asking about the civic attitude and activities of professional engineers in their communities, said that engineers were preoccupied with their own technical activities and that they seldom came to the front to assume active leadership in community affairs. A great number of these civic leaders shrewdly noted that engineers shrank from participation in activities that required them to speak before groups of people or take part in public discussions. The impression registered by pioneers in the engineering welfare movement seems to be confirmed by employers and community leaders.

Editors of society journals can confirm this idea if they will speak frankly of the quantity and quality of materials submitted to them for publication by engineers. A study of all the journals of engineering societies issued over a five year period will show that leading articles in all these journals have been written by a surprisingly small number of highly articulate engineers on a correspondingly small range of subjects. The subject of "unionism" and the related topic of "labor legislation," for instance, crowded out all other matters from the pages of society journals devoted to non-technical problems for a period of five years. The cumulative index of each of ten society journals during this period will verify this statement, and the authors' index for the same period will demonstrate that all the material was written by a dozen (perhaps fewer than a dozen) eminent members of the several societies. The amount of space allotted one such broad topic would seem to indicate that it is of absorbing interest to all members. If this assumption is correct, should it not follow that a great many engineers would have information or convictions that would lead them to prepare articles for publication in the journals?

Editors must publish the best material available. They must latch onto the best articles obtainable. This means that they must rely in the main on the few engineers who have demonstrated ability to set forth ideas with logic, force, and clarity. This first-rate material must be supplemented by whatever relatively amateurish articles are provided by less

skilled writers. These offerings must be edited to insure at least a degree of conformity with rhetorical principles of "unity, coherence, and emphasis," principles with which the contributor is all too often unfamiliar. If the editor of any journal is candid, he will tell you that very few members of his society submit articles on either technical or professional subjects. He will admit that a discouragingly small portion of that offered is fresh, interesting, and constructive, based on the author's own experience. He will also confess that it is far below the standard of material published in popular periodicals, in clarity, force, and interest compelling qualities.

Engineers writing strictly for engineer-readers, writing simply and directly from their own experience, about their work and its ramifications, about the social and economic aspects of engineering in their own range of observation, should provide material better than anything that could be purchased from professional writers. They seldom do. Instead, they usually submit essays on abstract subjects. They write about "the engineer" instead of about engineers they know. They emulate in an embarrassingly ineffective manner the style of some vitriolic or facetious columnist. They toss the material together in a hodge-podge that a freshman student of English composition would condemn for its total disregard of principles of "unity, coherence and emphasis."

Headquarters of any association can give you further evidence that engineers are inarticulate. If the organization has an employment department, it has discovered that few engineers can write an effective letter of application or set forth their qualifications for a job with ease and force in a personal interview. The department knows that a great many applicants must be sifted to find one with the ability to write and speak on technical subjects well enough to qualify him for a job as copy writer for the advertising department, salesman or trouble shooter with a firm manufacturing tools, machinery, or other engineering commodities.

Engineers who are highly articulate discover that they can draw dividends on engineering training in advertising, sales, personnel, or other non-technical work in which their knowledge of technology is an adjunct rather than principal asset, and attain executive or administrative rank more quickly than they could by remaining in pure engineering. Nearly

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a third of the graduates of engineering schools, Donald Baker indicated in his scholarly but practical study of engineering education,* leave the profession for journalism, sales, advertising, and other vocations in which their engineering training is valuable only as background.

While the engineering profession is justly proud of the great number of engineers who have risen to executive rank in industry, commerce, and finance, and the surprising proportion who have become presidents of great colleges and universities, outranking all other professions in such distinction, it is still true that only a small percentage of all engineering graduates will attain that kind of eminence or find opportunity to do anything more than routine technical work. Native ability, physical energy, personality, and many other factors influence the fate line of individuals. It cannot be said that the quality of being articulate is determinative; it can be said that it is a great asset. Communication, the power to send and receive ideas, is as vital to the individual today as it is to our complex social organization.

Our great technological progress has been aided by, even as it has promoted, communication in the world. All the gifts of technology can be prostituted and perverted by an abuse of the power that modern methods of communication have lodged in the hands of political and economic leaders. The survival of democracy is in large degree dependent upon a recognition by individuals of their obligation to cultivate and use their own powers of communication. Individuals must, in spite of the temptation to receive information in predigested pellets from radio commentators, columnists, and propagandists of all kinds, learn to read well, extensively, and with good judgment, organizing and appraising facts and reaching conclusions. They must be able to send as well as to receive, defending what they believe to be right, taking an active part in the affairs of their communities and of the nation.

Communication depends upon the language arts as much as it depends upon the systems and intrumentalities that modern man has devised for spreading information and opinions. Our public schools attempt to teach children to read well and with pleasure. The student must learn to recognize words, then understand their meaning, and finally to form judgments or opinions. The schools must also develop in children the ability to listen intelligently, tracing the same steps.

These two arts, reading and listening intelligently, contribute to development of the child's ability to "receive." He must also learn to "send." He must learn to speak and to write with such competence that he can impart his own ideas clearly and forcefully. It is not an easy assignment. Children who have access to unlimited numbers of comic strips and comic books, who can state their desire for adventure tales at the movies or at home listening to radio thrillers or watching television, are

* Some Thoughts on Engineering Education, by Donald McCord Baker published, A.S.C.E. Proceedings, April, 1946.

not likely to have natural enthusiasm for the feats of Tom Sawyer if they must read 250 pages to obtain the sense of adventure imparted by one comic book with an aggregate of one printed page of captions. Engineering colleges today are full of freshmen who have remained immune to the charm of the printed page through twelve years of public school exposure.

No one can be compelled to like reading. The schools have always found it necessary to deal with children who have a high degree of resistance to the charms of literature. Diamond Dick and Buffalo Bill outranked Ivanhoe and Tale of Two Cities in decades past. There was a time, however, when students did not reach freshman year in engineering colleges without having done their stint of required reading. That was in the era "B.S.P."—Before Social Promotions. Youngsters know today that they can ignore almost any unpalatable offerings on the academic bill of fare and still be promoted. The high schools and colleges have "remedial reading classes" for them. Unfortunately, the 10th graders whose reading ability measures up only to 4th grade standards have difficulty in reading history, science, and mathematics texts with enough understanding to master their content. They have even greater difficulty in expressing whatever ideas they may be able to obtain from the text books which they read inadequately.

Discounting disciplinary courses, progressive or "socialized" education abhors such mechanistic exercises as "phonics" and "syllabification," "parsing," "Syntax" and "diagramming." The youngsters learn principally from "workbooks" in which they perfunctorily underline, x-out, or fill in blanks to master the intricacies of the English language. This is the manner in which they learn to avoid the common errors in case of pronouns, agreement of subject and predicate, or use of the principal parts of verbs. Our schools have turned out a whole generation of pupils who have enjoyed this immunity from formal grammar and spelling. The "lucky" generation is afraid to attempt to put its ideas on paper or face an audience with a formal talk because it does not know how to organize facts, prepare an outline to insure unity and effect an organized presentation of ideas, how to write paragraphs and sentences with coherent relation to each other and with close adherence to a topic sentence, or how to write sentences in which adverbs function as adverbs and subject and predicate agree in number.

Can You Send As Well as Receive?

Engineers, with four years of college training, should have superior powers of communication—both sending and receiving. The narrowness of engineering training, however, is a generally acknowledged fact. In college, their powers of communication have been separately and specifically cultivated in possibly two courses—one in fundamentals of composition and grammar, and one in engineering English or report writing.

Nothing that they have studied in college has significantly increased their ability to read well and with pleasure. Without enthusiasm for wide and general reading they have probably read nothing except technical treatises and periodicals since they left college. Their vocabularies (except for technological terms) include only what they brought from high school and a smattering of words picked up from newspapers and radio which they use recklessly, according to them the meaning inferred from the context. One eminent engineer wrote an editorial in which, without intent to insult several prominent rival societies, he referred to them as "beyond the pale" of A.A.E.'s influence. He had appropriated that word from some article in which it carried for him only the idea of boundary.

No word really belongs to anyone until he can spell it, pronounce it, define it, and use it correctly. No one should use a word which does not belong to him. There is no limit, however, on this form of wealth. Any man may own as many words as he is willing to earn. Vocabulary building should be a part of intelligent reading. When one hears a new word on the radio or sees it in print and believes that it might be useful, he should look for the word in a good unabridged dictionary. He should note all its connotations—the great variation in its meaning as it is associated with other words. A student, required to use the word "conscientious" in a sentence, said "Our piano is conscientious" and defended his statement on the grounds that the dictionary said "Conscientious" meant "upright."

Even though engineering training is narrow and though engineers may justly offer this as an excuse for their lack of facility in writing and speaking on non-technical subjects, engineers are themselves to blame if they remain inarticulate. Vocabulary building is the simplest of the therapeutic measures that can be recommended. Reading and word study; listening to radio and word study; deliberate use of new words will amass word wealth at as rapid a rate as the individual's interest and will power may dictate. Reader's Digest carries a regular feature which tests one's knowledge of the proper use, the meaning and derivation of 20 words that are frequently misused because of some slight phonic resemblance to another word of radically different meaning.

Engineers who are really earnest about vocabulary building should own a copy of Roget's Thesauras and learn to use it. It is not a book of synonyms. Words are grouped in this text in accordance with their relation to each other—adjectives, nouns, verbs, phrases, similes, proverbs, that have a bearing on the same situation.

Engineers whose reticence is due to lack of confidence in their ability

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to make verb and pronoun agree in number, or who sometimes find themselves at the end of the line without ever having achieved a predicate, would do well to borrow a 7th or 8th grade "language" book from some youngster and review fundamentals. Better still, buy two or three of the "workbooks" used in such courses and check their grammatical habits. See whether they do or do not recognize the difference between sentences and fragments, between a properly constructed sentence and run-on sentence. Test their ability to recognize parts of speech. Give themselves a quiz on the principal parts of verbs and run through some of the exercises that will demonstrate the extent of their knowledge of "helping verbs" and principal parts of irregular verbs.

Colleges and universities now offer a wide selection of home-study courses in English. Many of them also have courses in report writing or technical writing, especially designed for engineers. The University of North Dakota has two advanced courses which are described as "Composition and Literature for Engineers." Nearly all the schools list courses in composition and rhetoric (which include a review of grammar). These schools are members of the National University Extension Association which has prepared a "Guide to Correspondence Study." Copies may be obtained from the Office of the Secretary of the Association in Bloomington, Indiana. The cost of the guide is 25c. English courses are listed under Drama, Journalism, Literature, Speech, and Writing. Those classified as "composition" will best serve the purposes of engineers who need a thorough review of grammar and direction in the principles of composition.

After obtaining the guide, the prospective student writes for catalogs from any of the schools which offer the type of English instruction that he needs. Many of the schools have a high school home-study department, and for engineers who have had no formal instruction since they finished high school one of these basic courses might be more practical than a composition course at college level. Conversely, those who believe that they have a fairly comprehensive knowledge of rudimentary grammar and composition will be interested in advanced courses in composition, in writing speeches, in supervised reading, or the "great books" sequence.

Veterans are given a preferential rate in paying tuition for courses. Residents of a state are frequently enrolled at a fee lower than that charged non-residents. For this reason, an engineer will find it advisable to investigate thoroughly the offerings of universities and colleges maintained by his own state, and veterans should read the introductory matter in each school catalog to learn whether or not the schools enroll veterans at a preferential rate. If on enrolling an engineer makes it clear that he is taking the course solely for professional development and not for credit, leading to a degree, certain rather stiff requirements (prerequisite courses) may be waived, but much discretion should be used to avoid registering

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The first five chapters give basic information on the chemistry, physics and crystallography of phosphors. The last two chapters explain the essential factors involved in selecting, applying, and using important phosphors.

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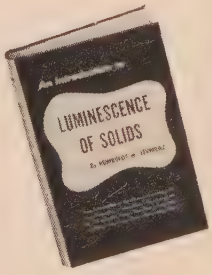

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for a course that might be unintelligible without some other foundation course.

These are days in which all intelligent citizens must develop and use competently all their powers of communication—both sending and receiving. It is crucially important that the people who believe in democratic government read widely, not merely the things that flatter their own ideas, but the books and periodicals that take a diametric stand, in order that the substantial citizen may recognize and be able to discredit the fallacies that are being advanced skilfully and with disconcerting success by enemies of democracy. No one can stand still. There is only the alternative of progress or retrogression. Engineers have respect for facts. If they look for facts outside the restricted field of technology they will find them and recognize them as reliably as they discover purely physical stresses and strains. They are not now curious about certain phenomena which merit their attention quite as much as do the technological problems which sometimes seem to engage their entire thought and concern. They must learn to put their thoughts on paper with the same directness and clarity that they exhibit when they write plans and specifications. The rules of composition and rhetoric are few and simple compared with some of the procedural laws that they have mastered and that they apply almost mechanically. They must learn to speak easily, clearly, logically and persuasively, in language that the laity can understand; not stump speeches, just normal conversation with fellow workers, employers, the public, and fellow engineers.

If one reads with discrimination and appreciation, one must become more articulate. The first gain is a vocabulary dividend. The next an unconscious emulation of style. Finally, there is the increment of knowledge, or ideas and an enthusiasm that induces one to talk about those ideas, easily and without self-consciousness. Reading books and talking about them is the pleasantest possible way in which to acquire skill in both composition and speech.

Those who have deplored the inarticulateness of engineers certainly do not hope to make chatterboxes of them. The profession already has its share of pompous windbags—every profession and vocation has more than its share. What these friendly critics desire for engineers is enough proficiency in the language arts to enable them, as a minimum requirement, to do these things: to sell themselves, either in a written or oral application for a job; to be able to state concisely, grammatically, and if necessary persuasively, what they are trying to do in a particular situation in order that they may obtain full cooperation from their associates and the unqualified approval and backing of their employers; to get from books and other sources of intellectual stimulation the benefit and pleasure that educated men should be able to obtain from these resources; and to take their proper place in this democracy as capable champions of truth and right.

Unity of the Engineering Profession

In order that our members may be aware of the efforts that are being made by the various engineering societies to bring about greater unity in the engineering profession, we publish a publicity release prepared by Secretary of the Exploratory Group, of the Engineers Joint Council, H. S. Osborne.

James H. Griffin, Chief Engineer, Board of Transportation of the City of New York, and a past president of A.A.E., is the official representative of the Association on the Exploratory Group.

The group of representatives of large Engineering Societies, invited by Engineers Joint Council to explore the question of organization for increased unity of the engineering profession, had its second meeting on March 31, 1950. This group consists of the following 16 Engineering Societies:

American Association of Engineers
American Inst. of Chemical Engrs.
American Inst. of Electrical Engrs.
American Inst. of Mining & Met. Engrs.
American Society of Civil Engrs.
American Society of Mech. Engrs.
American Society for Engrg. Education
American Soc. of Htg. & Ventilating Engrs.
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Illuminating Engineering Soc.
Inst. of Aeronautical Science
Inst. of Radio Engrs.
National Soc. of Professional Engrs.
Soc. of Automotive Engrs.
Soc. of Naval Architects & Marine Engrs.

Fourteen of the sixteen societies were represented at the recent meeting.

The major order of business was the consideration of the report of the Planning Committee of eight members which was appointed at the previous meeting of the Exploratory Group on October 20, 1949. The Planning Committee had been charged with the duty of studying and reporting back a discussion of various approaches which had been suggested to the question of organizing for increased unity.

The Planning Committee had held five meetings at which the wide range of subjects involved in the question at hand had been discussed. The report of the Committee submitted at this meeting included a discussion and comparative analysis of three possible approaches to the formation of a unity organization.

Recognizing that many approaches are possible to the report of the Planning Committee included also suggestions as to a number of basic principles which were recommended to serve as a guide in any formation of a "unity organization" of engineers—this term being used to designate the organization through which increased unity of the engineering profession may be brought about, without in any sense proposing that this be adopted as a name of such an organization. The basic principles include the following:

The general aim of the unity organization will be to represent all engineers and engineering organizations who desire to be so represented in dealing with questions of interest to the profession as a whole. With this general aim in view, the following are proposed as basic principles to serve as a guide in determining the form of the unity organization and its relation to present engineering organizations.

1. The unity organization should include the affiliation of the major national engineering societies.

2. Affiliation should be open to all national engineering societies meeting certain general standards, on vote of the governing body.

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which may be established, it may be required that to qualify as an affiliate an engineering society should have a grade of membership with qualifications at least as high as those prescribed by the unity organization as necessary for professional recognition. Also, as a practical matter, affiliation may be limited to societies having more than a specified minimum number of members who are qualified engineers in accordance with this definition.

3. The unity organization should be formed by the modification and development of a present organization or organizations or by the integration of two or more present organizations rather than by the establishment of an entirely new organization.

4. The government of the unity organization should reside in a governing body on which all qualified engineering groups who wish to be associated with the organization are appropriately represented.

5. The activities of the unity organization should be determined by the governing body under the terms of a broad statement of general purposes in the constitution of the organization.

While a fairly complete statement of the general purposes of the organization should appear in its constitution, it does not appear useful to attempt to determine in advance what its specific activities would be at any given time. These would, no doubt, change from time to time in accordance with the wishes of the members.

6. Within its field of activity, the unity organization should be authorized to deal directly with government agencies and others as a representative of the engineering profession.

For example, in such matters as the nomination of engineers to serve as members of committees and commissions, or the expression of opinions on public questions involving engineering, the unity organizations should be empowered to act directly without a referendum of its constituents.

7. To the extent practicable, the unity organization should take over present cooperative activities of groups of na-

tional engineering societies, where such activities appropriately fall within the scope of the unity organization.

8. The unity organization should have its own offices and staff.

These principles were accepted by the Exploratory Gorup subject to such modifications as might be arrived at in further discussions. The report of the Planning Committee also presented a number of other questions requiring further consideration.

In the general discussion of the Exploratory Group, every member presented his views as to the type and form of "unity organization" which seemed most desirable and the means by which it might be brought about. The discussion centered about the three approaches to the form of organization included in the report of the Planning Committee. These three approaches would be as follows:

A. Expand and modify the present Engineers Joint Council so that the members of a larger number of engineering societies would be represented and so that representation would be, to some extent, in proportion to membership.

B. Expand and modify the present National Society of Professional Engineers with the understanding that the existing engineering societies cooperate by urging their members to join and by referring to that Society items of a broad general nature which the Society is in a position to handle.

C. Modify the National Society of Professional Engineers so that registration is not a requirement for individual membership, modify the Engineers Joint Council as in Item A, and combine the NSPE Board of Directors with the EJC to form a single governing body.

After a full discussion the entire matter of preparing a further comparison of possible plans and a consideration of the questions on which agreement had not been reached was referred to the Planning Committee for study. It is expected that the next report of the Planning Committee will be made to the Exploratory Group shortly after the summer vacation period.

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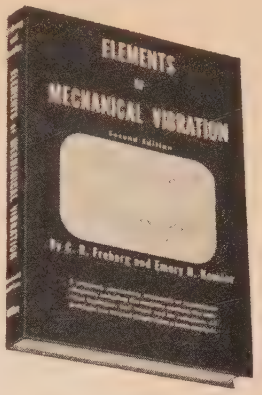

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Book Reviews

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The book is a complete source of information on the technical properties of wood; contains comprehensive tables presenting fundamental strength and related properties for more than 150 American woods as well as tables of recommended basic-stress and working-stress values for structural species. A sample plan for testing small clear specimens of wood appears in the Appendix. An excellent book all the way through.

Thin Films and Surfaces, by Winifred Lewis. Chemical Publishing Co., Inc. $4.75

This book is a critical survey of the results of research on thin metallic films and surfaces with special reference to aluminum. Various aspects of the structure of metal surfaces, surface films and thin films, the production of them, metallic films, the mechanical, optical, magnetic, electrical and chemical properties of thin films and surfaces, are thoroughly treated.

Acoustic Measurements, by Leo L. Beranek, Assoc. Prof., Communication Engrg., and Tech. Dir., Acoustics Laboratory, M.I.T. John Wiley & Sons. $7.00.

A reference for graduate students and workers in the field of Acoustics, prepared to cover acoustic measurements as an aid to the acoustic physicist, the communications engineer, the psychologist performing measurements involving the human hearing mechanism, the otologist and the industrialist, applying acoustic measuring techniques in manufacturing processes. The book gives the mathematical equations underlying each type of acoustic measurement and describes and compares the relative advantages and disadvantages of alternative apparatuses. An excellent book.

Out of my Later Years, by Albert Einstein. Philosophical Library. $4.75.

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The Technique of Radio Design, second edition, by E. E. Zepler, Ph.D., Head, Dept., Electronics, Telecommunications and Radio Engrg., University College, Southampton. John Wiley & Sons, Inc. $5.00.

Although the first edition stressed practical application, the author has in his second edition, given an even more usable slant to the material. The book is simply written, and understandable. 30 new diagrams have been added.

Machine Tools for Engineers, by Charles R. Hine, Assist. Prof., Manufacturing Processes, Rensselaer Polytechnic Institute. McGraw-Hill Book Co. $3.50

The aim of the book is to introduce the student to the fundamentals of machine tools and production processes. It presents the production side of machine tools to the engineer; gives a descriptive and analytical treatment to all types of machine tools, how they are used, what they can do, and their limitations. It is the first of two volumes on manufacturing processes evolved from courses developed at Rensselaer Polytechnic. The second volume, on casting and forming, is in preparation.

Applied Sedimentation, edited by Parker D. Trask, Supervising Geologist Department of Public Works, State of California, San Francisco, California. Price $5.00. John Wiley & Sons, Inc., New York.

This book has been prepared by a num-

ber of specialists who explain the principles and practical application of sedimentation. All types of earth materials are covered. The chapter on strength of sediments is outstanding in that it treats load bearing of deposits which is important to road builders, hydraulic engineers, in fact all engineers having to do with structures based on sediments or sedimentary rocks. A real contribution to contemporary literature.

Materials Engineering of Metal Products, by Norman E. Woldman, Ph.D. Consulting Metallurgical Engineer and member of the faculty of The Cooper Union School of Engineering and Steven Institute of Technology Graduate School. Price $10.00. Reinhold Publishing Corporation, New York.

This is a companion book to Metal Process Engineering published in 1948. Dr. Woldman has certainly produced a much needed book for the engineering profession in fact it may be stated that it is the most useful book this reviewer has seen for some time. The text is well written and the advantages of all types of metals and alloys are fully discussed and all disadvantages are frankly stated. No technical library, large or small, can afford to be without this vital work.

Electronics, Principles and Applications, by Ralph R. Wright, Associate Professor of Electrical Engineering, Virginia Polytechnic Institute. Price $5.50. The Ronald Press Company, New York.

Written primarily for nonelectrical students the book is equally useful to engineers in other fields. The book is lucidly written and not too mathematical. Chapter 11, entitled High-Frequency Heating is worth the price of the book.

Dictionary of Electronic Terms, edited by Harry L. Van Velzer, Ph.D., Assoc. Prof., E.E., Univ. of Illinois. Allied Radio Corpn. 25 cents.

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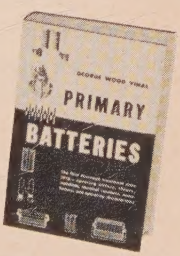

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American Association of Engineers has always maintained that every eligible engineer should doubly safeguard the high standards of his profession by active membership in his appropriate technical society, for the advancement of technique, and by membership in American Association of Engineers for protection of social and economic interests which are also vital to professional standing.

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The department was created by the original constitution, and began operation within a few days after the organization was founded. It has been serving engineers and engineering employers every day since that time. Its fundamental principle was that employer satisfaction must be the basis of a successful employment service; that is still its first law. From its inception the department has felt engineers should have personnel service within the profession, self-sustaining, but operated as a SERVICE, not for profit, thus permitting efficient service to engineers at minimum cost.

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